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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/269,624	03/30/1999	CHRISTOPHER ANGUS	SHS11000WSW	1336

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EXAMINER

FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
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2172

25

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/269,624

Applicant(s)

ANGUS ET AL.

Examiner

Jean B Fleurantin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on RCE 1 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30,47-50 and 83-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30,47-50 and 83-91 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 January 2004 has been entered. Claims 85-91 are added. Claims 1-30, 47-50 and 83-91 remain pending for examination.

Examiner discusses the limitations of claims 85-91 in the following rejection.

### ***Specification***

2. The abstract of the disclosure is objected to because (Fig. 2) should not be in the same page as the Abstract (page 95). Appropriate correction is required.

### ***Response to Applicant's Remarks***

3. Applicant's arguments filed on 12 January 2004 with respect to claims 1-30, 47-50 and 83-91 have been fully considered but, have been found persuasive only to the extent that the prior art of record does not specifically teach the limitations "that the relationship (between entities) are associated with a historical period of validity, as required claim 1." However, Hancock discloses such limitations.

Applicant(s) stated that on page 25, (dated 27 June 2003) with respect to claim 84 have been fully considered but, have been found persuasive only to the extent that the prior art of record does not specifically teach the limitations "as a processor running through a list of entity

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records in a hierarchical structure in order to determine a list of requester operational records, and then subsequently changing the hierarchical level at which to search through entity records if the requested operational records could not be found at the first hierarchical level.” However, Hancock discloses such limitations.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Claim Rejections - 35 U.S.C. § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-30, 47-50 and 83-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 5,617,567 issued to (hereinafter “Doktor”) in view of US Pat. No. 5,504,879 issued to Eisenberg (hereinafter “Eisenberg”).

As per claims 1, 47 and 83, Doktor discloses a data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device (thus, the database system comprises a central processing unit which is operatively

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coupled so as to be controlled by an access control program 120d stored in a first memory means 120, read-only-memory or random access memory; see col. 8, lines 5-10), in which said storage device stores: multiple operation records each storing data relating to one or more historical operation involving at least one entity (thus, table may be used to define a continuously expandable backbone with supports various relationships between various entities instances; see col. 27, lines 62-64), each said operation record comprising data recording the operation (thus, each of these answer is recorded as a paired set of an entity class number and an entity instance number, in response the entity storage means then produces detailed information from the referenced entity instance tables; see col. 33, lines 1-8), each said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related (thus, each of these bubbles is referred to as an 'entity type' or 'entity class' the 'customer' entity class generically covers all entities which might fit under the broad descriptor 'customer' regardless of whether that entity is a natural person, a business corporation, an association or so forth, the 'address' entity class covers all entities which fit under the broad descriptor 'address' regardless of whether the subject entity is a residential address, a business address, a post-office mailing address or so forth, similarly the 'account' entity class covers all sorts of accounts including savings accounts, checking accounts, trust accounts; see col. 17, lines 2-13); and

b) multiple entity records storing data indicating relationships between said entities (thus, storage space is conserved in cases where plural entities of a first type are related to a common entity of a second type; see col. 15, lines 27-29). Doktor does not explicitly disclose steps of data defining a date associated with the operation, and each said relationship being associated

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with a historical period of validity. However, Eisenberg discloses the start time is the time when the variant is effective for the user installation and the end time is the variant ceases to be effective, similarly to the description provided by the specification, page 31, lines 16-18, (see Eisenberg col. 13, lines 51-58), and see column 79, lines 4-8. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combined teachings of Doktor and Eisenberg with data defining a date associated with the operation, and period of validity. Such modification would allow the teachings of Doktor and Eisenberg to improve the accuracy and the reliability of the data processing system, and to provide direct versioning of entries in the dbms, with the versioning managed by the dbms to preserve the semantic validity of the data in the system, (see Eisenberg col. 2, lines 19-21).

As per claim 2, Doktor discloses, wherein the processor is programmed to extract output data from a subset of said operation records, and to output said output data (thus, all store of relational inquires can be answered by starting with a known first instance of a first entity class irrespective of whether the class is a head entity class or tail entity class, and searching through the relational instance table 730 to locate all relationship instances is a member; see col. 25, lines 18-30).

As per claim 3, in addition to claim 1, Doktor further discloses steps of inputting instructions defining one or more selected entities for which said output data relates (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; see col. 7, lines 17-19).

As per claims 4 and 7, in addition to claim 1, Doktor further discloses steps of selecting said subset using those selected entity relationships (thus, relational database tables are normally organized to create implied set and subset relations between their respective items of pre-stored information, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; see col. 5, lines 36-41).

As per claim 5, in addition to claim 1, Doktor further discloses, permit analysis of operation records anterior to that date as if the current relationship between entities had previously existed, (see col. 5, lines 36-41).

As per claim 6, the limitations of claim 6 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claim 8, Doktor discloses, wherein the processor is programmed to input a change from an existing said relationship between entities to a new said relationship (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created; see col. 3, lines 43-45).

As per claim 9, in addition to claim 1, Doktor further discloses to create a record of the new relationship (thus, databases require similar restructuring every time a new category of information relationships or a new type of inquiry is created; see col. 3, lines 43-45).

As per claims 10 and 26, in addition to claim 1, Doktor further discloses an association record for each past or present relationship between a pair of said entities (thus, each of these answer is recorded as a paired set of an entity class number and an entity instance number, in response the entity storage means then produces detailed information from the referenced entity instance tables; see col. 33, lines 5-12).

As per claim 11, 12 and 88, the limitations of claims 11, 12 and 88 are rejected in the analysis of claim 48, and these claims are rejected on that basis.

As per claim 13, Doktor discloses, wherein the entity records represent first and second successive levels of hierarchy of a product family, (see col. 3, lines 43-45).

As per claim 14, the analysis of claim 14 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claims 15 and 49, in addition to claims 1, Doktor further discloses use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; see col. 5, lines 36-40).



As per claim 16, Doktor discloses, in which said storage means contains multiple sets of said operation records, each said set comprising multiple said operation records, said sets relating to different classes of operations and said records within each set relating to different instances of the same type of operation (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entries in the relation instances table, adding new rows to this relation instances table allows for the addition of new relations, adding new rows to the table allows for the creation of new classes 'types' of relationships; see col. 7, lines 18-21).

As per claims 17, Doktor discloses, in which each said operation record contains at least one variable data field storing a value of a measure from a range of possible said values for said measure (thus, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; see col. 5, lines 36-40).

As per claims 18 and 20, Doktor discloses, in which said storage means further contains:  
c) metadata comprising multiple operation definition records, each defining the format of records of a respective said set of operation records (thus, storage space is conserved in cases where plural entities of a first type are related to a common entity of a second type; see col. 15, lines 27-29).

As per claim 19, in addition to claim 17, Doktor further discloses in which each operation definition record indicates the units of said measure, (see col. 21, lines 45-49).

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As per claims 21 and 50, in addition to claim 19, Doktor further discloses where said measure could be derived from alternative said sets, select one of said sets (thus, relational database tables are normally organized to create implied set and subset relations between their respective items of pre-stored information, the elements of the lowest level subsets are stored in base tables and higher level sets are built by defining in other tables; see col. 5, lines 36-42).

As per claim 22, Doktor discloses, wherein said selection is based at least in part on the relative sizes of said sets (thus, since the tables may be expanded as desired by adding new entries to empty middle or bottom slots found within them, a lay user can create new entities; see col. 28, lines 6-9).

As per claim 23, Doktor discloses, wherein said selection is based at least in part on the relative difficulty of deriving said measure from the data stored in the variable data fields of each of said sets, (see col. 28, lines 6-9).

As per claim 24, in addition to claim 21, Doktor further discloses where necessary, derive said measure from a combination of a first value from a variable data field of a record of a first set of operation records, and a second first value from a variable data field of a record of a second set of operation records (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; see col. 7, lines 17-19).

As per claim 25, the limitations of claim 25 are rejected in the analysis of claims 1 and 24, and this claim is rejected on that basis.

As per claim 27, Doktor discloses, wherein said transactions are sales, inventory, or purchase transactions, (see cols. 19-20, lines 61-34).

As per claim 28, Doktor discloses, wherein said processor is programmed to load one or more new said operation records into said storage device, (see col. 3, lines 43-45).

As per claim 29 and 30, in addition to claim 28, Doktor further discloses in which said processor is programmed to determine whether said new operation records comply with said metadata (thus, storage space is conserved in cases where plural entities of a first type are related to a common entity of a second type; see col. 15, lines 27-29).

As per claim 48, in addition to claim 1, Doktor does not explicitly disclose wherein the entity records comprise a hierarchical structure, in which at least a first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity, said records including link data linking said first and second entity records whereby to allow said processor to traverse said hierarchy. However, Eisenberg discloses step of following sequence of events which deals with two entities and relationship between them, the example assumes a two level variant hierarchy with two production as the root variant, (see Eisenberg col. 3, lines 20-32), and see column 24, lines 39-48. It would have been obvious to a person of ordinary skill

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in the art at the time the invention was made to modify the combined teachings of Doktor and Eisenberg with wherein the entity records comprise a hierarchical structure, in which at least a first entity record relates to a specific entity, and a second to a more generic entity encompassing said specific entity. Such modification would allow the teachings of Doktor and Eisenberg to improve the accuracy and the reliability of the data processing system, and to provide a method for resolving sources and targets of relationships, (see Eisenberg col. 4, lines 4-6).

As per claim 84, in addition to claims 1 and 48, Doktor does not explicitly disclose a hierarchically higher level entity dimension and to repeat said determination and, in the event that all required said operation records relate to said hierarchically higher level, to use said hierarchically higher entity instead of said selected entity in selecting said subset of operation records. However, Eisenberg discloses step of following sequence of events which deals with two entities and relationship between them, the example assumes a two level variant hierarchy with two production as the root variant, (see Eisenberg col. 3, lines 20-32), and column 24, lines 8-48. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combined teachings of Doktor and Eisenberg with a hierarchically higher level entity dimension and to repeat said determination. Such modification would allow the teachings of Doktor and Eisenberg to improve the accuracy and the reliability of the data processing system, and to provide a method for resolving sources and targets of relationships, (see Eisenberg col. 4, lines 4-6).

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As per claim 85, in addition to claim 1, Doktor further discloses inputting instructions defining one or more selected entities for which said output data relates (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; see col. 7, lines 17-19).

As per claim 86, in addition to claim 1, Doktor further discloses selecting said subset using those selected entity relationships (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; see col. 7, lines 17-19).

As per claim 87, Doktor discloses a data processing system comprising a data storage device and a processor programmed to read data from, and write data to, said storage device (thus, the database system comprises a central processing unit which is operatively coupled so as to be controlled by an access control program 120d stored in a first memory means 120, read-only-memory or random access memory; see col. 8, lines 5-10), in which said storage device stores: multiple operation records each storing data relating to one or more historical operation involving at least one entity (thus, table may be used to define a continuously expandable backbone with supports various relationships between various entities instances; see col. 27, lines 62-64), the first type of data being transaction data (thus, in a first record region of the table 130(a) there is provided a first continuous data string which is subdivided to have a first string portion; see col. 10, lines 6-9), the second type of data consisting of metadata and data associated with at least one entity (thus, storage space is conserved in cases where plural entities

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of a first type are related to a common entity of a second type; see col. 15, lines 27-29), said entity being an identifiable thing within a business or other undertaking to which information resulting from a transaction, measurement or other such assignment can be related (thus, each of these bubbles is referred to as an "entity type" or "entity class" the "customer" entity class generically covers all entities which might fit under the broad descriptor "customer" regardless of whether that entity is a natural person, a business corporation, an association or so forth, the "address" entity class covers all entities which fit under the broad descriptor "address" regardless of whether the subject entity is a residential address; see col. 17, lines 2-13). Doktor does not explicitly disclose both said metadata and said data associated with at least one entity having a historical period of validity. However, Eisenberg discloses the start time is the time when the variant is effective for the user installation and the end time is the variant ceases to be effective, similarly to the description provided by the specification, page 31, lines 16-18, (see Eisenberg col. 13, lines 51-58), and see column 79, lines 4-8. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combined teachings of Doktor and Eisenberg with data defining a date associated with the operation, and period of validity. Such modification would allow the teachings of Doktor and Eisenberg to improve the accuracy and the reliability of the data processing system, and to provide direct versioning of entries in the dbms, with the versioning managed by the dbms to preserve the semantic validity of the data in the system, (see Eisenberg col. 2, lines 19-21).

As per claim 89, in addition to claim 84, Doktor further discloses the steps of instructions; locating one or more selected data from selected classes of entity corresponding to said instructions (thus, relationships between instances of a primary entity and a secondary entity are thus expressly defined by entities in the relation instances table; see col. 7, lines 17-19).

As per claims 90 and 91, the limitations of claims 90 and 91 are rejected in the analysis of claims 18 and 87, and these claims are rejected on that basis.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nochur et al. US Patent No. 5,835,758 relates to method and system for representing, storing, processing and communicating various conceptual and physical entities.

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### CONTACT INFORMATION

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Fleurantin whose telephone number is 703-308-6718.

The examiner can normally be reached on 7:30-6:00.

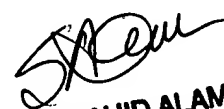
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BREENE JOHN E can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Jean Bolte Fleurantin

March 24, 2004



SHAHID ALAM  
PRIMARY EXAMINER